5062

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

ALASKA FOREST RESEARCH CENTER

Forest Insect Surveys

Quarterly Progress Report
January-March 1960

This quarter was devoted almost entirely to planning for the coming field season, attendance at meetings and winding up work from last field season.

Insect Collection Data

The coding instructions and forms for the systematic accumulation of insect collection data were completed. As it is now set up, 75 of the 80 punch card columns will be utilized; the remaining five being reserved until experience with the system dictates an appropriate use. It is anticipated that certain refinements in the coding and the field collection phase will be necessary as the program becomes operative. The program will not become fully operational until a full-time man can be recruited to handle the laboratory and office phase. In the meantime the program will continue on a part-time basis, the same as the past two years, utilizing seasonal help.

Cone and Seed Insects

Dissection of 240 white spruce cones, collected in late August 1959 from areas near Fairbanks, found insect damage considerably increased over similar collections in 1958. Megastignus sp. destroyed 2.8% of the seed and Laspeyresia youngana Kearfott infested 14.2% of the cones. Gall midges were found in 70.2% of the cones and an as yet unidentified insect or insects caused extensive damage to 71.4% of the cones. Many of the cones supported populations of several different insect species.

The cone crop in 1958 was relatively heavy, while the 1959 cone crop was fairly light.

Collections have been made after cone maturity but before seedfall. Apparently one or more of the insect species encountered completes development prior to cone maturity. To more fully evaluate insect damage from these species it will be necessary to obtain additional collections, probably throughout cone development.

One of the main objectives of this study is the determination of annual seed loss by each of the causitive agents. Up to now the base for determining these losses has been the total number of seed produced in the productive zone of the cone. This figure has been determined from all of the cones in the collection each year. It now appears that this is an unrealistic approach since in some years many cones are deformed or otherwise fail to reach full maturity. This results in large yearly fluctuations in the total number of seed per cone which is reflected in a

yearly change in the base figure. It appears that the best base would be the number of seed produced or capable of being produced in the productive zone of fully mature cones. This figure is most accurately obtained by counting the number of seed bracts in the productive zone and multiplying by two (2 seeds per bract). This figure to be retained as a base in all years.

Black-headed Budworm and Hemlock Sawfly Outbreak

The population buildup of these two insects in the southern panhandle has drawn attention to the potential need of an operational control plan. Operating conditions, weather and topography are substantially different than areas where large-scale aerial spraying operations have so far been carried on. Benton Howard from the Division of Pest Control, Region 6, is scheduled to spend May and June in Region 10 developing an operational control plan.

An egg survey of the overwintering populations of both the black-headed budworm and the hemlock sawfly is scheduled for the first half of May. Larval sampling of these insects will commence in mid-June and continue until pupation occurs, probably around the first of August. Considerable boat and aircraft time will be required in these surveys.

Personnel

Two summer assistant jobs have been filled and tentative arrangements made for a third. Recruitment of summer help has become a time-consuming task. The current high interest in Alaska, plus a recruitment letter to several universities, prompted numerous requests for jobs. This response is fine but unfortunately most of the applicants have certain reservations about actually accepting employment in Alaska. As a result an undue amount of correspondence is usually generated. This situation will improve as more candidates have the opportunity to work here and to report favorably on the benefits of summer employment in Alaska.

Meetings

Western Forest Insect Work Conference. Ogden, Utah. March 9-11. Downing.

Region 10 Orientation Meeting. Juneau, Alaska. March 21-25. Talk by Downing.

Juneau, Alaska
April 21, 1960

G. L. Downing
Entomologist